Claims

1. Portable surface friction testing apparatus for determining the coefficient of friction of a surface, the apparatus consisting of a body, the underside of which is fitted with at least one slider to induce friction between the body and the test surface as the body moves across the test surface, and means of propelling that body to a predetermined initial velocity at the commencement of a test run, over which test run the coefficient of friction of the surface is determined by reference to the distance required to cause the at least one slider to bring the body to a standstill.

2. Apparatus as claimed in Claim 1, wherein the body is in the form of a trolley comprising wheels in contact with the ground for providing, together with the at least one slider, directional stability to the trolley, the wheels and at least one slider all positioned such that the force between the at least one slider and the surface can be determined and remains constant under any particular value of uniform deceleration.

3. Apparatus as claimed in Claim 2, where the trolley is arranged to have two wheels in contact with the ground during the test run, with a single slider forming the third point of contact with the ground.

4. Apparatus as claimed in Claim 2 or 3, wherein the means for propelling the trolley comprises a ramp of known incline and length.

5. Apparatus as claimed in Claim 4, wherein the trolley comprises at least one additional wheel, wherein the ramp and trolley are arranged such that the at least one additional wheel supports the trolley on the ramp during a period in which the trolley accelerates down the ramp, but wherein the mass on the at least one wheel is transferred to the at least one slider at commencement of the test run.

6. Apparatus as claimed in Claim 2, 3, 4 or 5, wherein the trolley comprises two wheels arranged to be in contact with test surface during a test run, the two wheels being on a common axis and locked together to improve direction stability.

7. Apparatus as claimed in any preceding claim, wherein the body is propelled during the test run only by the initial kinetic energy of the body until the body comes to rest, the distance travelled during the test run being indicative of the coefficient of friction of the surface over which the body has travelled.

8. Apparatus as claimed in any preceding claim, wherein the at least one slider is a plastics or rubber material.

9. Apparatus as claimed in any preceding claim, wherein the dimensions of the at least one slider, the force on the slider and the speed of commencement of the test run are selected such that when the test surface is wet the hydro-dynamic critical film thickness developed is in the range of 1 to 3 μm.

10. Apparatus as claimed in Claim 9, wherein the hydro-dynamic critical film thickness developed is in the range 1.5 to 2.5 μm.

11. Apparatus as claimed in Claim 10, wherein the hydro-dynamic critical film thickness developed is in the range of 1.9 to 2.1 μm.

12. Apparatus as claimed in any preceding claim, wherein the apparatus comprises means for determining the distance travelled by the body.

13. Apparatus as claimed in Claim 12, wherein the distance is automatically used to calculate the coefficient of friction for the test surface.

14. Apparatus as claimed in Claim 13, comprising a look-up table or graph for determining the coefficient of friction corresponding to the distance travelled by the body.

15. Apparatus as claimed in any one of Claims 12, 13 or 14, wherein the body determines and displays the coefficient of friction.

16. Apparatus as claimed in any preceding claim, wherein the mass of the body is less than 6 kg.

17. Surface friction testing apparatus, substantially as hereinbefore described, with reference to, and/or as illustrated in one or more of the accompanying figures.

AMENDED CLAIMS IAP20 Rec'd PCT/PTO 16 DEC 2005

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Claims

1. Portable surface friction testing apparatus for determining the coefficient of friction of a surface, the apparatus consisting of a body, the underside of which is fitted with at least one slider to induce friction between the body and the test surface as the body moves across the test surface, and means of propelling that body to a predetermined initial velocity at the commencement of a test run, over which test run the coefficient of friction of the surface is determined by reference to the distance required to cause the at least one slider to bring the body to a standstill, wherein the dimensions of the at least one slider, the force on the slider and the speed of commencement of the test run are selected such that when the test surface is wet the hydro-dynamic critical film thickness developed is in the range of 1 to 3 μm.

2. Apparatus as claimed in Claim 1, wherein the body is in the form of a trolley comprising wheels in contact with the ground for providing, together with the at least one slider, directional stability to the trolley, the wheels and at least one slider all positioned such that the force between the at least one slider and the surface can be determined and remains constant under any particular value of uniform deceleration.

3. Apparatus as claimed in Claim 2, where the trolley is arranged to have two wheels in contact with the ground during the test run, with a single slider forming the third point of contact with the ground.

4. Apparatus as claimed in Claim 2 or 3, wherein the means for propelling the trolley comprises a ramp of known incline and length.

5. Apparatus as claimed in Claim 4, wherein the trolley comprises at least one additional wheel, wherein the ramp and trolley are arranged such that the at least one additional wheel supports the trolley on the ramp during a period in which the trolley accelerates down the ramp, but wherein the mass on the at least one wheel is transferred to the at least one slider at commencement of the test run.

6. Portable surface friction testing apparatus for determining the coefficient of friction of a surface, the apparatus consisting of a body, the underside of which is fitted with at least one slider to induce friction between the body and the test surface as the body moves across the test surface, and means of propelling that body to a predetermined initial velocity at the commencement of a test run, over which test run the coefficieint of friction of the surface is determined by reference to the distance required to cause the at least one slider to bring the body to a standstill, wherein:

the body is in the form of a trolley comprising wheels in contact with the ground for providing, together with the at least one slider, directional stability to the trolley, the wheels and at least one slider all positioned such that the force between the at least one slider and the surface can be determined and remains constant under any particular value of uniform deceleration;

the trolley is arranged to have two wheels in contact with the ground during the test run, with a single slider forming the third point of contact with the ground;

the means for propelling the trolley comprises a ramp of know incline and length; and

the trolley comprises at least one additional wheel and the ramp and trolley are arranged such that the at least one additional wheel supports the trolley on the ramp during

a period in which the trolley accelerates down the ramp, but wherein the mass on the at least one wheel is transferred to the at least one slider at commencement of the test run.

7. Apparatus as claimed in Claim 6 wherein the dimensions of the at least one slider, the force on the slider and the speed of commencement of the test run are selected such that when the test surface is wet the hydro-dynamic critical film thickness developed is in the range of 1 to 3 μm.

8. Apparatus as claimed in any one of claims 2 to 7 wherein the trolley comprises two wheels arranged to be in contact with test surface during a test run, the two wheels being on a common axis and locked together to improve direction stability.

9. Apparatus as claimed in any preceding claim, wherein the body is propelled during the test run only by the initial kinetic energy of the body until the body comes to rest, the distance travelled during the test run being indicative of the coefficient of friction of the surface over which the body has travelled.

10. Apparatus as claimed in any preceding claim, wherein the at least one slider is a plastics or rubber material.

11. Apparatus as claimed in any preceding claim, wherein the hydro-dynamic critical film thickness developed is in the range 1.5 to 2.5 μm.

12. Apparatus as claimed in Claim 10, wherein the hydro-dynamic critical film thickness developed is in the range of 1.9 to 2.1 μm.

13. Apparatus as claimed in any preceding claim, wherein the apparatus comprises means for determining the distance travelled by the body.

14. Apparatus as claimed in Claim 13, wherein the distance is automatically used to calculate the coefficient of friction for the test surface.

15. Apparatus as claimed in Claim 14, comprising a look-up table or graph for determining the coefficient of friction corresponding to the distance travelled by the body.

16. Apparatus as claimed in any one of Claims 13, 14 or 15, wherein the body determines and displays the coefficient of friction.

17. Apparatus as claimed in any preceding claim, wherein the mass of the body is less than 6 kg.